

WHAT IS CLAIMED IS:

1 1. A method of delivering streaming data content to a client device over a data
2 communication network in response to a request for the data content from the client device,
3 the method comprising:

4 receiving, by a server, a request from a first client device over the data
5 communication network, the request identifying streaming data content stored on a storage
6 system;

7 identifying a first controller device associated with the storage system on which the
8 data content is stored;

9 transmitting a data request message from the server to the first controller device, the
10 data request message identifying the first client device and the data content requested by the
11 first client device;

12 retrieving, by the first controller device, the streaming data content from the storage
13 system; and

14 transferring the retrieved data content directly to the first client device over the data
15 communication network from the first controller device through a communication port for
16 communicably coupling the first controller device to the data communication network.

1 2. A method as recited in claim 1, wherein the first controller device includes a
2 bus port that provides for communication with one or more other controller devices over a
3 bus.

1 3. The method as recited in claim 2, wherein the bus port is a PCI port.

1 4. The method as recited in claim 1, wherein the communication port is one of
2 a fibre channel port, an Infiniband port, and a Gigabit Ethernet port.

1 5. The method as recited in claim 1, wherein the streaming data content
2 transferred to the client device includes a plurality of packets, each packet having headers
3 and trailers of a network protocol stack and a data payload.

1 6. The method as recited in claim 1, wherein the data request message further
2 identifies a messaging protocol.

1 7. The method as recited in claim 6, wherein the messaging protocol includes
2 one of a Real Time Streaming Protocol (RTSP), HTTP and FTP.

1 15. The method as recited in claim 10, wherein the streaming data content
2 transferred to the client device includes a plurality of packets, each packet having headers
3 and trailers of a network protocol stack and a data payload.

1 16. The method as recited in claim 10, wherein the data request message further
2 identifies a messaging protocol.

1 17. The method as recited in claim 16, wherein the messaging protocol includes
2 one of a Real Time Streaming Protocol (RTSP), HTTP and FTP.

1 18. The method as recited in claim 110, wherein the first controller device is
2 located in a network switch device coupled to the data communication network.

1 19. The method as recited in claim 18, wherein the second controller device is
2 located on the network switch device, and wherein the first and second controller devices
3 communicate over a bus.

1 20. The method as recited in claim 18, wherein the second controller device is
2 located on a second network switch device coupled to the data communication network.

1 21. The method as recited in claim 20, wherein the first and second switches are
2 communicably coupled over a network fabric, wherein the first and second controller
3 devices communicate over the network fabric.

1 22. The method as recited in claim 20, wherein the network fabric includes a
2 fibre channel network.

1 23. The method as recited in claim 20, wherein the first and second switches are
2 remote from each other, and wherein the first and second controller devices communicate
3 over a back end network.

1 24. A method of delivering streaming data content to a client device over a data
2 communication network in response to a request for the data content from the client device,
3 the method comprising:

4 receiving, by a server, a request from a first client device over a first data
5 communication network, the request identifying streaming data content stored on a storage
6 system;

transmitting a data request message from the server to a first controller device, the data request message identifying the first client device and the data content requested by the first client device;

identifying a second controller device associated with the storage system on which the data content is stored;

transmitting a second data request message to the second controller device, the second data request message identifying the first client device and the data content requested by the first client device;

retrieving, by the second controller device, the streaming data content from the storage system; and

transferring the retrieved data content directly to the first client device from the second controller device.

25. The method of claim 24, wherein the first and second controller devices are located in geographically remote locations relative to each other.

26. The method of claim 24, wherein the first and second controller devices communicate over a second data communication network different from the first data communication network.

27. The method of claim 24, wherein the server communicates with the first controller device over the first data communication network.

28. The method of claim 24, wherein the second controller communicates with the first client device over the first data communication network.

29. The method of claim 24, wherein the second controller device communicates with the storage system over a storage area network.

30. A method of delivering streaming data content to a client device from two or more controller devices over a data communication network in response to a request for the data content from the client device, wherein the data content includes two or more blocks of data stored on a storage system, the method comprising:

receiving, by a server, a request from a first client device over the data communication network, the request identifying streaming data content stored on a storage system;

36. The method of claim 1, wherein the first controller device communicates with the storage system over a storage area network.

37. A method of delivering streaming data content to a client device over a data communication network in response to a request for the data content from the client device, the method comprising:

receiving, by a server, a request from a first client device over the data communication network, the request identifying streaming data content stored on a storage system;

transmitting a data request message over the data communication network from the server to a first controller device, wherein the data request message identifies the first client device and the data content requested by the first client device, and wherein the first controller is coupled to the storage system over a storage area network (SAN);

retrieving, by the first controller device, the streaming data content from the storage system over the SAN; and

transferring the retrieved data content directly to the first client device over the data communication network from the first controller device.

38. The method of claim 1, wherein the first controller device is located in a network switch device coupled to the data communication network.

39. A method of delivering streaming data content to a client device over a data communication network in response to a request for the data content from the client device, the method comprising:

receiving, by a first controller device, a request sent by a first client device to a server over the data communication network, the request identifying streaming data content stored on a storage system, wherein the first controller device and the server are coupled by the data communication network;

processing the request by the first controller device; and

controlling, by the first controller device, the delivery of the requested streaming data directly to the first client device over the data communication network by one of the first controller device and a second controller device.

40. The method of claim 39, wherein the first controller device is coupled to the storage system over a storage area network (SAN), wherein controlling includes:

retrieving, by the first controller device, the streaming data content from the storage system over the SAN; and

transferring the retrieved data content directly to the first client device over the data communication network from the first controller device.

41. The method of claim 39, further including sending the request to the server.

42. The method of claim 41, further including notifying the server that the request is being processed by the first controller device.

43. The method of claim 39, wherein controlling includes:
transmitting a data request message from the first controller device to the second controller device, wherein the data request message identifies the first client device and the data content requested by the first client device, and wherein the second controller device is coupled to the storage system over a storage area network (SAN);

retrieving, by the second controller device, the streaming data content from the storage system over the SAN; and

transferring the retrieved data content directly to the first client device over the data communication network from the second controller device.

44. The method of claim 43, wherein the first and second controller devices are coupled by a communication bus.

45. The method of claim 44, wherein the communication bus is a PCI bus.

46. The method of claim 43, wherein the first controller device is located in a first network switch device coupled to the data communication network and wherein the second controller device is located in a second network switch device coupled to the data communication network.

47. The method of claim 46, wherein the first and second controller devices communicate over one of the data communication network and a back end network.